

PROPOSED CLAIM AMENDMENTS

(10/506,734)

1-58. (Cancelled)

59. (Currently amended) A method of identifying a target of a perturbation comprising steps of:

(a) providing-perturbing a biological system comprising a biological network comprising a plurality of biological-biochemical species having activities;

providing or generating a model of the biological system constructed according to the method of claim 1;

perturbing one or more biochemical species in the network;

(b) characterizing a response of the biological system to the perturbation by determining quantitative changes of expression or activity of the plurality of the biological species at allowing the biological network to reach a steady state following the perturbation;

determining the response of at least one of the biochemical species in the biological network to the compound; and

(c) calculating-calculating predicted perturbations to individual species that would yield the same response determined at step (b) using a computer device having a software component suitably programmed to carry out such calculation based on a pre-determined model of the biological system, wherein the predicted perturbations are represented by predicted changes of expression or activity of individual species; and

(d) identifying a target of the perturbation based on the predicted perturbations to individual species at step (c), predicted perturbations of biochemical species in the biological network that would be expected to yield the determined responses according to the model;